OEMMODULE™ 386

386SX 40MHz PC/AT
Single Component Computer

Actual Size

**40MHz 386SX
PC/AT multi-chip module**

2MB DRAM

512KB Internal Flash Memory

**Complete motherboard in
a 2.2" X 3" component**

Embedded PC/AT BIOS

Fail-safe Boot ROM™

**Caldera DR-DOS™ and
GSI DOS-ROM™ included**

Low power

Rugged design

**Rapid integration:
Proven PC compatibility
Standard motherboard feature set
Expert technical support**

**Now covered by
lifetime warranty**＊

The OEMmodule 386 Single Component Computer (SCC) provides the fastest, most cost-effective means of incorporating a full PC/AT 386SX 40MHz motherboard into your OEM product. By combining the system hardware, software and solid state mass storage in a single compact device smaller than a credit card, an SCC lowers your exposure to possible development risks and significantly reduces your time-to-market. This unique integrated design makes the OEMmodule 386 ideal for applications that require, low power, high reliability and a small overall product size.

Quicker design cycle, shorter time-to-market

Designed from inception for use in embedded systems, the OEMmodule 386 requires minimal external components. The embedded BIOS and DOS enable you to develop software on your desktop PC/AT then easily transfer your development work to the embedded system.

Reduce manufacturing costs

By integrating a full 80386SX AT-compatible computer into your proprietary OEM design, you eliminate the need for multiple boards within your product. With the OEMmodule 386 you also eliminate cable connectors and mounting hardware that can vibrate loose and cause reliability problems.
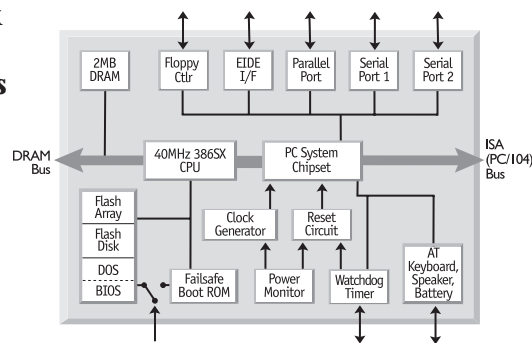
Full-compatibility

Since the OEMmodule 386 is fully compatible with the PC/AT Industry Standard Architecture (ISA) you gain access to:

• Widest selection of hardware and software available.
• Proven architecture supported by hundreds of ISA bus suppliers.
• Cost-effective, readily available development tools and operating systems.

Complete feature set

The OEMmodule 386 contains all standard motherboard features including 40MHz CPU, 2MB DRAM, 2 serial ports, 1 parallel port, floppy and EIDE disk controllers, AT keyboard controller, AT-compatible BIOS, General Software Embedded DOS-ROM™ (preloaded), Caldera DR-DOS™, and user-available internal flash for total solid-state operation.

This feature set optimizes the OEM designer's ability to quickly incorporate IBM PC/AT hardware, software and bus compatibility within proprietary product designs.

The Inside Choice for Embedded Control

SPECIFICATIONS
OEMmodule™ 386 Features

386SX-40MHz CPU
- Full 32-bit internal architecture.
- Cost effective 16-bit hardware environment.
- Virtual memory, paging and hardware enforced protection.
- Physical memory space of up to 64 MB.

DRAM Controller Supports
- 2M bytes on-board DRAM.
- High performance MUXed DRAM interleave, CPU pipelined operation.
- Page mode and 2-way interleaving.
- Shadow RAM.
- Multiple context EMS support.

PC Core Logic with PC/AT Compatibility
- DMA controllers.
- Interrupt controllers.
- Timer/counters.
- AT keyboard controller.
- Realtime clock.

ISA Bus
- Compliant with standard PC/AT expansion bus with an IRQ and DMA channel subset.
- Supports PC/104 implementation.

Fail-safe Boot ROM™
- Embedded ROM.
- Boot to a pre-determined, factory defined state regardless of the internal BIOS flash memory's condition.
- Full flash memory restore functionality via the serial port.
- Recover easily from the corruption or loss of CPU boot data.

Watchdog Timer
- Programmable tickle sources.
- Automatic reset or NMI (jumper selectable) if user application goes out of control.

Power Monitor
- Brownout protection - settable voltage threshold.
- Provides reliable reset signal if power fluctuates.

Serial Ports
- Two 16550-compatible serial ports (up to 115K Baud)

Parallel Port
- Fully compatible with the AT printer port plus bi-directional operation (EPP/ECP).

Floppy Disk Controller
- Software compatible with the CMOS765B controller for one or two drives.
- Integrated digital data separator capable of data transfer rates up to 2Mbps.
- Requires no external components.

EIDE Hard Drive Interface
- Full 40-pin interface to standard EIDE hard disk drive.
- Supports up to two EIDE drives (master/slave).
- LED activity light support.

Solid State Flash Memory Device
- 512KB Internal Flash Memory.
- 180KB resident flash disk (RFD) available for DOS and OEM software use - normally the boot drive.

PC BIOS
- Preloaded, highly customized version of General Software's Embedded BIOS.
- Standard AT BIOS functionality.
- Support for OEM add-ons and special customization.
- *SETUP* information stored in non-volatile flash EPROM allows battery-free operation.
- Shadowed in DRAM for optimum performance.

Embedded DOS
- General Software Embedded DOS-ROM core preloaded and customized for the OEMmodule 386.
- Caldera DR-DOS available free of charge.
- Support for standard DOS software.

Electrical Specifications
- +5V only ±5% operation.
- 2.2W power consumption.

Mechanical / Environmental
- **Size:** 2.20" x 3.00" x 0.48" (55.9 mm x 76.2 mm x 12.2 mm)
- **Overall Footprint:** 2.34" x 3.15" (59.5 mm x 79.9 mm)
- **Leads:** 240 (50 x 70) gull wing pins at 0.03" (0.8 mm) width on 0.04" (1.0 mm) pitch. Pin-out optimized for ease of bus layout.
- **Operating temperature:** -40°F to 185°F (-40°C to 85°C).
- **Storage temperature:** -67°F to 212°F (-55°C to 100°C).
- **Relative humidity:** 5% to 95% non-condensing.
- **Weight:** 3 oz. (85 gm).

Ordering Information
Quantity
MOD-386-Q-02
386SX 40MHz with 2MB DRAM, 512KB built-in flash, 2 serial & 1 parallel port, floppy and EIDE controllers, BIOS and DOS. Does not include manuals or utility disk.

Development Kits
See respective data sheets for complete information.

SLC-386-K-03
ZF SlotCard™ 386 Development Kit - AT-ISA bus card form factor w/ OEMmodule 386-40MHz with 2MB DRAM, 512KB built-in flash, SVGA controller, speaker, BIOS and DOS, technical manuals, cables and utility software. Does not include external DRAM or flash.

104-386-K-01
ZF 104Card™ 386 Development Kit - PC/104 module with OEMmodule 386-40MHz w/2MB DRAM and 512K built-in flash, 2MB additional onboard flash, 4 serial and 2 parallel ports, BIOS and DOS, technical manuals, cables, and utility disk.

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